

REMARKS

Claims 1-19 are pending in this application. By this Amendment, the specification and claims 12 and 13 are amended. Claim 12 is amended to recite features from claim 13 and supported in the specification at, for example, page 10, lines 7-14, page 19, lines 9-16 and Fig. 2. No new matter is added by any of these amendments.

Applicants gratefully acknowledge that claims 1-11 are allowed. Applicants assert that all of claims 12-19 are also allowable for the reasons discussed below.

Reconsideration based on the following remarks is respectfully requested.

I. Amendment Entry after Final Rejection

The foregoing amendments do not raise any new issues after Final Rejection. Therefore, entry of the amendments is proper under 37 CFR §1.116 because the amendments place the application in condition for allowance. Accordingly, Applicants respectfully request entry of this Amendment.

II. Claims 12-19 Define Patentable Subject Matter

The Office Action rejects claims 12-19 under 35 U.S.C. §102(b) over U.S. Patent 5,473,890 to Takeshima *et al.* (hereinafter “Takeshima”). This rejection is respectfully traversed.

Takeshima does not teach or suggest an exhaust emission purification device for an internal combustion engine, including a sulfur component holding agent arranged in the exhaust path of the internal combustion engine for holding a sulfur component when an air-fuel ratio is lean or substantially stiochiometric or rich with a temperature of the sulfur component holding agent being below a sulfur component releasing temperature, and for releasing the sulfur component when the air-fuel ratio of the exhaust gas is rich and the temperature exceeds the releasing temperature, a NO_x holding agent arranged downstream of the sulfur component holding agent in the exhaust gas for holding NO_x and the sulfur

components when the air-fuel ratio of the exhaust gas flowing thereinto is lean, a flow rate regulation valve for controlling a portion of the exhaust gas to bypass the NO_x holding agent through a bypass, and reducing agent adding means for adding a reducing agent to the exhaust gas flowing into the NO_x holding agent, the reducing agent adding means arranged between the flow rate regulation valve and the NO_x holding agent, wherein the concentration of the sulfur component in the reducing agent added by the reducing agent adding means is below the concentration of the sulfur component in the fuel supplied to a combustion chamber of the internal combustion engine, as recited in claim 12.

For example, the specification, at pages 10 and 19, discloses various exemplary aspects in which the flow rate regulation valve (68) enables a portion of the exhaust gas to bypass the NO_x holding agent (62) through a bypass pipe (66d), and the reducing agent adding means (70) is disposed between the flow rate regulation valve (68) and the NO_x holding agent (62). Thus, Applicants' claimed features enable proper regulation of the fuel flowing into the NO_x holding agent (62) by preventing fuel from attaching to the flow rate regulation valve, as provided in claim 12.

Instead, Takeshima discloses injecting reduction agent (*e.g.*, hydrogen carbide) from a tank 62 via a feeding pump 61 and through a feeding valve 60 into an exhaust port 17 for an internal combustion engine 1. In particular, Takeshima teaches that the feeding valve 60 injects the reduction agent upstream of both a NO_x absorbent 19 and an SO_x absorbent 18 (col. 10, lines 15-22, col. 11, lines 21-53 and Fig. 10 of Takeshima). Therefore, Takeshima fails to teach or suggest the flow rate regulation valve arranged in association with the reducing agent adding means, as provided in claim 12.

Also, Takeshima teaches a switch valve 27 to divert flow from the NO_x absorbent 19 and through a bypass 24 while the SO_x absorbent 18 releases the sulfur oxides (col. 19, lines 25-53, col. 23, lines 34-62 and Fig. 23 of Takeshima). However, Takeshima fails to teach or

suggest the reducing agent adding means being arranged between the flow rate regulation valve and the NO_x holding agent, as recited in claim 12.

Thus, there is no teaching or suggestion in Takeshima of releasing the sulfur component under rich air-fuel ratio with the temperature exceeding the releasing temperature, and holding the sulfur component otherwise. These reasons also apply by extension to claims 13-19 based on their dependence from claim 12.

A claim must be literally disclosed for a proper rejection under §102. This requirement is satisfied “only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference” (MPEP §2131). Applicants assert that the Final Office Action fails to satisfy this requirement with Takeshima.

For at least these reasons, Applicants respectfully assert that independent claim 12 is now patentable over the applied reference. Dependent claims 13-19 are likewise patentable over the applied reference for at least the reasons discussed as well as for the additional features they recite. Consequently, all the claims are in condition for allowance. Thus, Applicants respectfully request that the rejection under 35 U.S.C. §102 be withdrawn.

III. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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